

BEFORE THE STATE OF WASHINGTON  
ENERGY FACILITY SITE EVALUATION COUNCIL

In the Matter of Application No. 96-1

Olympic Pipe Line Company

Cross Cascade Pipeline Project

**PRE-FILED TESTIMONY OF  
JULIE L. WILSON, Ph.D., CIH**

ISSUE:

ENVIRONMENTAL RISKS OF PROPOSED CROSS  
CASCADE PIPELINE RELATED TO HUMAN HEALTH

SPONSOR:

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Cascade Columbia Alliance

**BRICKLIN &  
GENDLER,  
LLP**  
ATTORNEYS-AT-  
LAW  
SUITE 1015  
FOURTH AND  
PIKE BUILDING  
1424 FOURTH  
AVENUE  
SEATTLE, WA  
98101  
(206) 621-8868

**Would you please identify yourself?**

My name is Julie L. Wilson. I am a principal at Landau Associates.

**Would you please summarize your experience and education relevant to your work?**

I have a Ph.D. in environmental medicine (toxicology), a Masters in health physics, and a Bachelor of Science in biology. My expertise is risk assessment and industrial hygiene/health and safety. I have over 18 years experience in risk assessment and industrial hygiene/health and safety and I am currently the manager of the Portland office at Landau Associates.

I lead risk assessment evaluations and manage multi-disciplinary technical teams in performing chemical and radiological risk assessments under CERCLA (Comprehensive Environmental Response, Compensation and Liability Act), RCRA (Resource Conservation and Recovery Act), and state regulations for existing sites and proposed facilities. I have managed a wide range of environmental projects, including several site investigations and subsequent clean-up actions and environmental audits for industrial and clinical facilities. I am active in appointed positions in both Washington and Oregon in the development of state policy and regulations pertaining to site investigation and clean-up. I am on the Washington Department of Ecology's Science Advisory Board and was appointed to that Board in 1995.

**Are you familiar with the Cross Cascade Pipeline proposal submitted to the Energy Facility Site Evaluation Council by Olympic Pipe Line Company?**

Yes. I reviewed the EFSEC Application submitted by Olympic Pipe Line and the Draft Environmental Impact Statement prepared by Jones & Stokes.

**What specific area did you focus on in your review and analysis of the Cross Cascade Pipeline proposal?**

Since there was no risk assessment in the application. I focused on illustrating what the applicant must do so that EFSEC can understand the potential threat that a petroleum release would present to human health and prepared a human health risk evaluation of the proposal. That presentation is in Chapter 3 of Exhibit HGL-1, the Environmental Risks Report.

**What is your opinion of the Application's presentation of impacts to human health?**

As addressed above, the petroleum pipeline in many cases will cross directly over our drinking water, which is confined in aquifers. The proposal introduces the very real possibility of having hazardous petroleum oil leak into our drinking water sources. This is not a minor issue -- not only is the impact itself a serious health concern, but once the petroleum is in the water, it is extremely difficult to effectively clean it up. Consequently, the applicant should address the issue of toxicity of petroleum to humans and the potential threat a petroleum release presents to human health. But nowhere does the applicant address this issue.

**Why is it important for the applicant to consider human health risks presented by their pipeline?**

The evaluation of human health risks from a petroleum pipeline release is an extremely important component of the overall evaluation of the potential threat the pipeline poses to communities along its route. If risk to human health is not examined, any evaluation of potential threat or risk posed by the pipeline will seriously underestimate the true risk. Furthermore, if potential human health risk is not evaluated, the knowledge gained from such an evaluation cannot be used in optimum design of the pipeline or in identifying appropriate mitigation measures.

**Did Olympic consider human health risks at all?**

While the Application considers the possibility that a leak or spill may occur, it does not look at the potential health risks that would result from those leaks or spills.

**What should the applicant do to conduct a human health risk evaluation?**

The central risk to human health from a spill or leak can be evaluated using well established, qualitative and quantitative techniques. The potential threat to human health is dependent on both the type and duration of the exposure sustained and the toxicity of the petroleum product. A prospective risk evaluation should be conducted that would involve examination of multiple "what if" scenarios appropriate to the different areas to be traversed by the pipeline. This evaluation should examine the release of different types and volumes of petroleum products in a variety of plausible settings. Accordingly, one would conduct an exposure assessment and a toxicity assessment.

The exposure assessment identifies human receptor populations that could potentially come in contact with a petroleum release, describes these populations with respect to the type and level of exposure that could occur, and estimates the level of exposure that may be sustained by each identified receptor population through all applicable exposure pathways. The details of conducting such an exposure assessment are set forth in Chapter 3 of Exhibit HGL-1, the Environmental Risks Report.

With regard to the toxicity assessment, petroleum products, including gasoline, diesel, and other refined products, consist of complex mixtures of hydrocarbon compounds. Some of the compounds in petroleum products are known or suspected human carcinogens while others can cause both chronic and acute systemic health effects. The toxicity of some of the compounds known to be present in petroleum products, such as benzene, ethyl benzene, toluene, and xylene (BETX) and a chemical group known as polynuclear aromatic hydrocarbons (PAHs) is relatively well characterized. The toxicity of most of the compounds present in petroleum has not been clearly defined. However, methods have been developed for evaluating the toxicity of these other compounds. The potential presence of other chemicals in the petroleum product must be examined. Clearly, the public has a right to know and understand the risks posed by a potential release.

Finally, a human health risk evaluation would also include a risk characterization. The type of risk evaluation appropriate for examining human health risks from a petroleum release is the type of evaluation in which a range of potential scenarios and outcomes is identified. Once the magnitude of a potential spill is established, the concentrations of petroleum product in soil and groundwater at the location examined can be estimated. Using the estimated values of these concentrations, and information obtained in an exposure and toxicity assessment, potential human health risks can be calculated for a given "what if" scenario.

END OF DIRECT TESTIMONY OF WITNESS

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GENDLER,  
LLP**  
ATTORNEYS-AT-  
LAW  
SUITE 1015  
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